

Cedar Crest College
GSC 101: Physical Geology (Fall 2009)

Instructor: Brian Exton

Office: Miller 3

Phone: x3344

E-mail: bjexton@cedarcrest.edu

Office hours: Tuesday 11am-12pm and by appointment

Class meeting locations/times: Lecture – SCI 138, TR 9:30-11am
 Lab – Miller 21, Mondays 1-4pm

Textbook: **Earth's Dynamic Systems (10e)** *out of print, but available at bookstore

Course description: A study of the Earth's dynamic tectonic and hydrologic systems: seismicity, volcanism, crustal deformation; rivers, glaciers, erosion; also the origin, classification and properties of rocks and minerals. Lecture three hours, laboratory three hours, including required field trips.

Course goals: This course serves as one of the main introductory science courses available to students at the college. Course content is geared primarily towards non-science majors needing to fulfill the general education requirements set forth by the college. At the same time, students majoring in the life sciences may also find the course enlightening, and perhaps even applicable to their fields of interest.

The laboratory portion of the course is integral to understanding geology. Topics covered in lab will reinforce concepts from the lecture, provide hands-on time with mineral, rock, and fossil samples, and introduce additional techniques utilized by geologists, such as interpreting geologic maps. Field trips will allow you to apply what you have learned in class to an actual field area, and to integrate that knowledge in a class project.

Course objectives & assessment:

Objective 1: At the completion of the course, students will understand basic concepts in physical geology.

Assessment: Students will show proficiency by successfully completing a series of examinations during the semester.

Objective 2: At the completion of the course, students will show proficiency with basic geologic laboratory techniques, including mineral, rock, and fossil identification, map interpretation, etc.

Assessment: Students will show proficiency by successfully completing a series of laboratory exercises during the semester.

Objective 3: At the completion of the course, students will be able to describe the geologic history of Pennsylvania.

Assessment: Students will show proficiency by successfully completing a laboratory project by the end of the semester.

Student assessment

Lecture exams: There will be three lecture exams and one lab practical exam, in addition to a final cumulative exam. Although there are assigned readings almost every week, most of the material you will see on the quizzes and exams will come from my lectures. Videos may also be used to show examples of relevant geologic features. Additional readings may be given to stimulate class discussion and debate. Exams will usually consist of multiple-choice and short answer questions. There will also be a fair number of questions where you are required to DRAW something.

No exam will be given early and there are no make-ups without a valid written excuse. When possible, excuses should be presented BEFORE the scheduled date of the exam. Make-ups must be made within one week of original exam. If you have a scheduling conflict for the date of an exam or trip, please notify me at least two weeks beforehand.

Lab assignments: Throughout the semester there will be lab activities that relate to lecture topics, as well as ones that expand your knowledge of geology. These assignments will be collected and graded, and will account for 25% of your final grade. Late assignments will not be accepted.

Grade tally:

3 Lecture Exams (@ 15% each)	45%
Lab Assignments	25%
Group project (TBD)	10%
Final Comprehensive Exam	20%

Grading scale:

92.0 – 100	A
90.0 - 91.9	A-
88.0 – 89.9	B+
82.0 – 87.9	B
80.0 – 81.9	B-
78.0 – 79.9	C+
72.0 – 77.9	C
70.0 – 71.9	C-
68.0 – 69.9	D+
60.0 – 67.9	D
less than 60	F

Academic philosophies

Honor Code: I fully support the Cedar Crest College Honor Code as stated in the Customs Book.

Classroom Protocol: I fully support the Cedar Crest College Classroom Protocol Code as stated in the Customs Book.

Plagiarism: I fully support the Cedar Crest policy on plagiarism. Cases of plagiarism, whether deliberate or accidental, will not be tolerated and will result in an “F” for the given assignment.

Learning disabilities: Students with documented disabilities who may need academic accommodations should discuss these needs with their professors during the first two weeks of class. Students with disabilities who wish to request accommodations should contact the Advising Center.

Attendance: You are expected to attend and actively participate in all lectures and laboratory exercises. I expect you to arrive to class in a timely manner. It is your responsibility to inform me of planned absences and it is your responsibility to collect any assignments, handouts, etc.

The Bottom Line

Your success in this class is up to *you*. I can help you to understand difficult material, but it is your responsibility to read the material before coming to class, to take notes, and to organize information so that you can retrieve it. If you need help improving your study skills, talk to me. I will not know that you are having trouble until test time, and by then, it might be too late!

Recommendations for success:

- 1) **Attend class**—if you are not here, that will affect how well you grasp the material, etc.
- 2) **Prepare ahead of time**—read the assigned material BEFORE coming to class.
- 3) **Keep your notes in good order**—I recommend that you recopy all notes within 24 hrs of lecture while the material is still fresh in your mind. This will also enable you to ask for missing information in the next lecture. Note taking and note recopying are important study skills.
- 4) **If you do not understand something, ask for clarification**—do not be afraid to ask questions. The only dumb questions are those that are not asked.

GSC 101: Physical Geology (Fall 2009)
Course Weekly Outline

Week 1

Lab: Introduction
Plate Tectonics (Ch. 17+)

Week 2

Plate Tectonics cont'd
Divergent and Convergent Plate
Boundaries

Week 3

NO LAB (Labor Day)
Plate Tectonics cont'd
Transform Plate Boundaries, Hotspots
and Mantle Plumes

Week 4

Rocks and Minerals
Virtual FT: Grand Canyon
EXAM #1 (Thurs, Sept. 17th)

Week 5

Igneous Rocks and Volcanoes

Week 6

Weathering and Erosion
Sedimentary Rocks

Week 7

River and Groundwater Systems

Week 8

NO LAB (Fall Break)

Week 9

Shorelines
EXAM #2 (Thurs, Oct. 22nd)
No class Friday (Inauguration)

Week 10

Fossils and Geologic History
Virtual FT: Burgess Shale

Week 11

Glaciers and Climate

Week 12

Eolian Systems
Environmental Geology

Week 13

Earth's Resources
Economic Geology
EXAM #3 (Thurs, Nov. 19th)

Week 14

Planetary Geology

Week 15

Lab: FT (TBD)
Geoscience Education

Week 16

Lab Final

Final Exam Date: TBA